

CLAIMS:

1. A plasma display apparatus comprising:
a plasma display panel with first and second electrodes associated with plasma
cells, and
a waveform generator coupled between the first and the second electrodes for
5 supplying, across the plasma cells, a voltage with slopes comprising a main part and a minor
part succeeding the main part,
the main part having a duration longer than a formative time lag of the plasma
cells, and
the minor part having a smaller amplitude than the main part, wherein the
10 plasma cells are ignited and sustained by the minor part.
2. A plasma display apparatus as claimed in claim 1, characterized in that the
waveform generator is adapted to generate the main part which is sine-wave shaped.
- 15 3. A plasma display apparatus as claimed in claim 2, characterized in that the
waveform generator is adapted to generate the main part which comprises substantially one
quarter of a sine-wave period lasting 2 to 5 times the formative time lag.
4. A plasma display apparatus as claimed in claim 1, characterized in that the
20 waveform generator is adapted to generate the main part to form a substantially continuous
sine wave.
5. A plasma display apparatus as claimed in claim 4, characterized in that the
substantially continuous sine wave has a period time which is 2 to 20 times longer than the
25 formative time lag.
6. A plasma display apparatus as claimed in claim 1, characterized in that the
waveform generator comprises:

a first waveform generator for generating an alternating voltage having slopes comprising the main part,

a second waveform generator for generating a pulse voltage having slopes comprising the minor part, and

5 a combining circuit for algebraically adding the alternating voltage and the pulse voltage to supply the sustain voltage.

7. A plasma display apparatus as claimed in claim 6, characterized in that the first waveform generator comprises an energy recovery circuit having switches and an
10 inductance to form a resonant circuit with a panel capacitance of the plasma panel during the slopes of the alternating voltage, the inductance having a value to obtain a duration of the slopes longer than the formative time lag.

8. A plasma display apparatus as claimed in claim 7, characterized in that the
15 energy recovery circuit comprises a timing circuit for controlling the switches to couple the panel capacitance to a supply voltage before a resonance current through the inductance becomes zero.

9. A plasma display apparatus as claimed in claim 7, characterized in that the
20 energy recovery circuit comprises a load arranged in parallel with the inductance.

10. A plasma display apparatus as claimed in claim 7, characterized in that the inductance is a first winding of a transformer, the second waveform generator is coupled to a second winding of the transformer, and the combining circuit comprises the transformer.
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11. A plasma display apparatus as claimed in claim 7, characterized in that the first waveform generator comprises a transformer with a first and a second winding, the first winding being arranged in a power supply line of the energy recovery circuit, the second winding being coupled to the second waveform generator, wherein the combining circuit
30 comprises the transformer.

12. A plasma display apparatus as claimed in claim 6, characterized in that the second waveform generator is adapted to generate a pulse voltage which is a substantially rectangular pulse.

13. A plasma display apparatus as claimed in claim 12, characterized in that the second waveform generator comprises an energy recovery circuit with an inductor with a value selected to obtain a duration of edges of the pulse voltage being less than the formative
5 time lag.